The Potential Contribution of IMPULSE to International Medical Undergraduate Education

The Premier Undergraduate Neuroscience Journal

Introduction

The journal IMPULSE was started by four undergraduate students and one faculty member (E3G) in the spring of 2003. The first issue was posted in 2004, and a total of eleven have now been archived, one per year. The current issue, 2015, is the twelfth. The journal has evolved from a non-peer review process, and now involves an extensive review process. The contributions have been received from students, and their reviews represent the world's twelve institutions. The first issue was reviewed by 14 students from different countries and two continents, with a single Faculty Advisor and Reviewer. The 2014 issue posted over 100 student reviewers representing 20 institutions in six countries and four continents. Many of these students were members of the 12 RTSs, one of which was in South Africa. The rest of the Reviewers were individuals who simply wished to have the experience and applied to join as independent reviewers. They were assigned to an RTS team and sent their reviews to the Associate Editor from that RTS. Each RTS had its own Associate Editor, who compiled the team’s review, and a Faculty Advisor or overseer and reviewed the receiving process. The most recent RTS to be added (2014) was from Carnegie Mellon University.

University undergraduate training in the U.S. is heavily influenced by scientific and clinical practice, and new and emerging opportunities. As a reviewer for IMPULSE is an example of these education enhancements. Internationally, however, most students are an interest in neurological topics and are undergraduate immediately post-secondary school medical studies and are consumed by their professional school work, leaving little time to learn about the research enterprise that is the foundation of their studies. However, occasional students in medical bachelor’s degree programs do join IMPULSE, and faculty at the University of the Free State (South Africa) have been monitoring a team of neuro-surgery-focused clinical students for the past five years. Individual students from around the world and the ENS group report that the opportunity to review original research papers and learn about how to evaluate neuroscience manuscripts is a valuable addition to their student-related career plans. Data from an earlier survey (reported at SfN/FENS in 2013/2014) showed that 85% of the 180 respondents have felt the experience and written their research. Over 75% felt it improved their literary research skills, while 99% felt it improved their article reading skills. Nearly 28% of these students were in M.B.B.S. programs, while a further 25% were in P.h.D. programs after their IMPULSE time.

Creating a Reviewer Training Site at any institution is easy and does not require any special application process. There are no costs, and the manner of involvement is flexible and up to each Faculty Advisor at each RTS. Some choose to offer a course for new Reviewers, some work with a campus neuroscience club, while others just focus on a group of students doing research in their laboratory. All that is needed to start an RTS at an institution is a faculty member willing to take on the role of the Faculty Advisor (see list at right of current E3G), and a few students willing to review articles. The first issue was Archetyped, which will become the Associate Editor for that RTS. The process works very similarly, and the support is geared toward mentoring the Associate Editors in all of the RTS Associate Editors, who then distribute the manuscript to their RTS Review Team for review. All of the next single review from each RTS is returned to the E3G and is final, and a final advisory compilation is created by the Executive Editor for return to the authors, usually within 6-8 weeks.

The first pages of two articles on how IMPULSE can be used in classes and teaching are shown below (from the online Journal of Undergraduate Neuroscience Education).